

Finding the balance in complex regional pain syndrome

Expertise, optimism, and evidence

G. Lorimer Moseley, PhD
Neil E. O'Connell, PhD

Correspondence to
Dr. Moseley:
Lorimer.Moseley@gmail.com

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Complex regional pain syndrome (CRPS), perhaps more than any other chronic pain disorder, is perplexing. It is highly disabling, particularly once it has “set in,” and it has a tendency to polarize the community—some view it as a quasideagnosis to obscure malingering or conceal substandard clinical skills,¹ and others as a multiple system overprotective response.² What is agreed is that its pathophysiology is not completely understood and that it is difficult to treat. In light of this rather murky backdrop, we welcome the new perspectives article in this issue of *Neurology*® by Birklein et al.³ They describe their own clinical approach to the problem and their impressions of what works, what does not, and where the field might be heading. The lead author is the most prolific and arguably the most important researcher in this field, and the article clearly draws on a wealth of expertise and clinical experience probably unmatched globally. The article reminds us of the remaining substantial challenges that we face: for example, the need for prospective studies, higher quality clinical trials and audits, and a putative model that accounts for the transition from acute CRPS to chronic CRPS, which is arguably characterized by distinct pathophysiology. Anyone who treats a good number of CRPS patients will recognize the clinical patterns to which the authors allude and be comforted by the realization that even this group, at the top of the field, share the same substantial treatment challenges.

It is critical, however, to position the article clearly as a perspectives piece, rather than a review of the available literature. Failure to recognize this might lead the naive reader to conclude that the evidence is more certain than it actually is. A case in point is the authors' account of cortical reorganization in CRPS. The authors declare that, particularly in the chronic stage, signs and symptoms result from cortical reorganization. This is intuitively attractive and we are among those who have developed treatments on the basis of this possibility,⁴ but it is a causal inference for which, to our knowledge, there are still no solid supportive data. In fact, one might equally declare

that signs and symptoms cause the cortical reorganization. Perhaps both are correct. Or neither. The point is that the risk presented by such declarative statements is that they become embedded in popular clinical consciousness, from whence they are difficult to extract should evidence against them emerge. Relevant here is a recent meta-analysis that highlighted the paucity and fragility of the evidence underpinning the popular view that the sensory cortical representation of the CRPS-affected limb shrinks,⁵ a view well ensconced in the clinical and research community.

At the risk of sounding prudish, a measured approach is also important when considering treatments. Systematic review of the evidence shows that, of the few treatments to have shown promise, the quality of the evidence actually remains low.⁶ Rehabilitation therapies vary widely and while some approaches show some promise, others show only small improvements^{6,7}; sympathetic block evidence is essentially negative,⁸ spinal cord stimulators are promising, although there are no sham-controlled studies, and the adverse event rate appears high.⁹ One might contend that the authors' advice that avoiding pain is deleterious seems sensible but, again, is based on clinical observations by the authors rather than published data. Finally, we agree that pain exposure therapy is promising but we await the results of the first clinical trial comparing this to conventional treatment. Such tensions remind us all of the need to balance innovation and evidence, promise and providence. Birklein et al. point out the potentially large disconnect that exists between the treatment effects observed in clinical trials and those observed in clinical practice. Herein lies the potential value of independently conducted high-quality clinical outcome audits and extensive collaborations using a core dataset, as is being pursued by the CRPS Special Interest Group of the International Association for the Study of Pain, although the case remains that clinical trials remain the best tool with which to estimate the true effects of our various treatments.

We recommend the reader to Birklein et al.'s open account of their own perspectives and experiences

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From the Sansom Institute for Health Research (G.L.M.), University of South Australia; PainAdelaide (G.L.M.), Adelaide, Australia; and the Institute of Environment, Health and Societies (N.E.O.), College of Health and Life Sciences, Department of Clinical Sciences, Brunel University, London, UK.

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dealing with CRPS. It is an important addition to the field and to have laid out their practices for all to critique is both generous and courageous. We also recommend that readers consult the Cochrane review on CRPS treatments⁶ and the available clinical guidelines (e.g., references 10 and 11).

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